

Amendment to the Claims

This listing of claims replaces all prior versions, and listings, of claims in the application.

Listing of Claims:

1. (Currently amended) An optical projection exposure device for imprinting a circuit pattern, ~~or the like,~~ on a printed circuit board, comprising:

a photo mask having a prescribed pattern, projection means for projecting said photo mask pattern onto said board,

a light source device for irradiating exposure rays through said projection means for imprinting said photo mask pattern on said board, and

an optical magnification adjustment system installed in between said photo mask and said board for correcting the magnification of said pattern in at least one arbitrary direction, wherein: said optical magnification adjustment system has a first plano-convex or plano-concave lens with an optical power Φ_2 , as defined by the equation below, and a second concave-plano or convex-plano lens with an optical power Φ_3 , as defined by the equation below, both of which are installed in a telecentric position on the side of an object surface or on the side of an image in an optical

exposure system, wherein the total system magnification of
said optical exposure system may be minutely varied by
changing the space between said lenses,

$$\phi_3 = -\phi(S_1 + e_1)/d_0$$

$$\phi_2 = (\phi - \phi_3)/(1 - d_0\phi_3)$$

where, ϕ : Total optical power of said optical
magnification adjustment system,

S_1 : Distance from the first surface of said first lens
to said object surface,

d_0 : Center space of said two lenses, that satisfies a
magnification $\beta=1$,

$e_1 = t_1/n_1$ (t_1 : Center thickness of said first lens 1,
 n_1 : Refraction index of said first lens 1).

2. (Cancelled)

3. (Currently amended) The device of claim ~~2~~ 1 wherein:

said optical exposure system has its optical aberrations corrected in advance according to its purpose in a condition where parallel planes of their total thickness equal to the total central thicknesses of said two lenses are inserted.

4. (Currently amended) The device of claim ~~2~~ 1 wherein:

said two lenses are cylindrical lenses.

5. (Currently amended) The device of claim ~~2~~ 1 wherein:
each of Abbe numbers v_1 and v_2 of said two lenses is
set to satisfy the following equation,

$$v_1/v_2 = \phi_2/\phi_3.$$

6. (Original) The device of claim 1 wherein:

said optical magnification adjustment system corrects
said magnification in at least one direction,
longitudinally or laterally of a board.

7. (Original) The device of claim 1 wherein:

said optical magnification adjustment system has at
least one cylindrical lens.

8. (Original) The device of claim 1 wherein:

said optical magnification adjustment system has
parallel planes which are bent in accordance with a curve
of secondary degree.

9. (Original) The device of claim 1 wherein:

said optical magnification adjustment system has one
of a cylindrical lens or a parallel plane bent according to

a curve of secondary degree for correcting magnification in one direction, and one of another cylindrical lens or another parallel plane bent according to a curve of secondary degree for correcting magnification in the direction perpendicular to said one direction.

10. (Original) The device of claim 1 wherein:

said optical magnification adjustment system is a telecentric optical system.